

I CLAIM:

1. An on-board, ventilating airflow management system for the electrical sliding-contact zone in an aircraft rotary electrical generating device comprising

an air intake spaced from the device, and disposed to intake a flow of air under
5 circumstances with the aircraft engine operating,

elongate fluid-flow conduit structure having an intake end disposed adjacent said air intake for receiving an airflow therefrom, a discharge end located adjacent said zone for directing thereinto the airflow received at the conduit structure's said intake end, and a fluid-flow path extending between and communicating with said ends, said conduit
10 structure being constructed and disposed to assume substantially the full responsibility for the delivery of flowing air into said zone, and

particulate filter structure operatively disposed in said conduit structure's said path, intermediate said intake and discharge ends, said filter structure being adapted to prevent particle passage into the mentioned electrical sliding-contact zone.

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2. The system of claim 1, wherein said conduit structure, upstream in said path from said filter structure, includes a velocity-modifying flow-expansion chamber which reduces airflow velocity.

20 3. The system of claim 1, wherein said conduit structure, intermediate it's said intake and discharge ends further includes liquid trap and drain structure.

4. The system of claim 3, wherein said trap and drain structure is gravity operated.

5. The system of claim 2, wherein said conduit structure, adjacent the location of said filter structure, includes liquid trap and drain structure.

6. A method for managing ventilating airflow for the electrical sliding-contact zone in an aircraft rotary electrical generating device comprising
intaking, during operation of the aircraft engine, a flow of air at an airflow
location which is functionally upstream from the location of the generating device,
filtering the thus intaken flow of air to block the passage of particulates entrained
in that flow, thus to create a filtered airflow, and
directing the created, filtered airflow into the mentioned electrical sliding-contact
zone in a manner whereby the filtered airflow is substantially all of the ventilating airflow
which enters the zone.

7. The method of claim 6 which further comprises, prior to filtering, reducing the velocity, and expanding the cross-sectional area, of the intaken airflow.

8. The method of claim 6 which further comprises, before performing said directing step, trapping and draining liquid entrained in the intaken airflow.

9. For use in a vehicle having an engine, an exhaust structure which is furnished for that engine, and an electrical generating device possessing a nominally exposed electrical sliding-contact interface zone, a method for protecting that zone from particulate exhaust effluent emitted by such exhaust structure, said method comprising,

5 providing a substantially exclusive airflow system which lies operatively intermediate the exhaust structure and the zone for defining substantially the full airflow which reaches that zone, and

within that system, performing particulate filtering at a point which is upstream from the zone.

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10. The method of claim 9 with respect of which the subject vehicle is an aircraft.